

ABSTRACT OF THE DISCLOSURE

A method of generating a design of a reticle for a photolithography process. The reticle may include phase shift features, binary features, and mixed features. The method includes generating a reticle design from a pattern layout and then optimizing the reticle design. In some examples, generating the reticle design includes binning the features of the layout based on feature width. Examples of optimization operations include an over/under operation, an under/over operation, a feature segment expansion operation, a feature edge portion conversion from a binary portion to a phase shift portion, a corner binary segment expansion, a discontinuity removal operation, and a feature dimension change operation that includes a determination of a Mask Error Factor (MEF).